

## WHAT IS CLAIMED IS:

1. A conversion kit for retrofitting a horizontal FFS packaging machine to include the attachment of a zipper to a package formed thereby, in which said packaging machine includes:

a frame;

a forming station mounted on said frame and having a forming die functioning cooperatively with a first lift station to form product-receiving cavities in a lower web of packaging film;

a product filling station;

a sealing station mounted on said frame and having a sealing die, functioning during a sealing cycle, cooperatively with a second lift station to seal packages with an upper web of packaging film; and,

means for conveying said lower web and said upper web of packaging film along said frame from an input side to an output side;

wherein said conversion kit comprises:

a zipper blank feed means for providing between said lower web and said upper web of packaging film a zipper blank to said sealing station;

a sealing and channel-forming die assembly providing a pathway therethrough for said zipper blank, said pathway passing between said lower web and said upper web of packaging film;

an impulse sealer in said channel-forming die for longitudinally sealing together, upon introduction of said zipper

blank into said pathway, said zipper blank, said lower web of packaging film, and said upper web of packaging film; and,

a zipper weld station mounted on said frame adjacent said sealing die, said zipper weld station longitudinally for transversely together the ends of said zipper, said lower web of packaging film, and said upper web of packaging film;

whereby said horizontal FFS packaging machine is modified to install zippers on packages produced thereby without an additional lift station therefor.

2. A conversion kit for retrofitting a horizontal FFS packaging machine as described in Claim 19, wherein said sealing and channel-forming die assembly further comprises spring means in cooperative functional relationship with said second lift station raising said lower web of packaging film at said impulse sealer above the level of said lower web of packaging film at said sealing die.

3. A conversion kit for retrofitting a horizontal FFS packaging machine as described in Claim 20 wherein said packaging film at said impulse sealer is lifted 5 mm. above the level of said packaging film at said sealing die.

4. A conversion kit for retrofitting a horizontal FFS packaging machine as described in Claim 19 wherein said channel-forming die further comprises:

a chiller for dissipating thermal energy generated by impulse sealing and maintaining the zipper blank free from thermal shock during installation thereof.

5. A conversion kit for retrofitting a horizontal FFS packaging machine as described in Claim 22 wherein the zipper blank returns to ambient room temperature within one minute of impulse sealing.

6. A conversion kit for retrofitting a horizontal FFS packaging machine as described in Claim 23 wherein the zipper blank returns to ambient room temperature within 20 seconds of impulse sealing.

7. A conversion kit for retrofitting a horizontal FFS packaging machine as described in Claim 22 wherein said chiller further comprises a thermal medium maintained at a temperature of  $65^{\circ} \pm 15^{\circ} \text{ F.}$

8. A conversion kit for retrofitting a horizontal FFS packaging machine as described in Claim 25 wherein said thermal medium is recirculating cooling water.

9. A conversion kit for retrofitting a horizontal FFS packaging machine as described in Claim 19 wherein said packaging

machine is a vacuum packaging machine having, during dwell time at said sealing station, an evacuation and sealing cycle concurrent with which the zipper blank is longitudinally sealed.

10. A conversion kit for retrofitting a horizontal FFS packaging machine as described in Claim 19 wherein said packaging machine is a modified atmosphere packaging machine having an atmosphere modification cycle wherein the zipper blank installation is concurrent with the atmosphere modification cycle thereof.